

What is claimed is:

1. An apparatus for shorting a spark plug within an internal combustion engine spark plug circuit, said spark plug circuit including a first low voltage electrical circuit, a power source attached to said first low voltage electrical circuit, a first transforming means attached to said first low voltage electrical circuit and a high voltage electrical circuit, means for generating a high voltage electrical impulse within said high voltage electrical circuit, a spark plug attached to said high voltage electrical circuit, said apparatus for monitoring and shorting comprising:
 - a. a second transforming means attached to said high voltage electrical circuit and a second low voltage electrical circuit;
 - b. short circuit means attached to said second low voltage electrical circuit.
2. The apparatus of claim 1, wherein said means for generating a high voltage electrical impulse is selected from the group consisting of a distributor and electronic control unit.
3. The apparatus of claim 2, wherein said means for generating a high voltage electrical impulse is coupled with a switching device, said switching device being selected from the group including a magnetic reluctance position sensor, a hall effect position sensor and an optical position sensor.
4. The apparatus of claim 1 wherein said first transforming means is an ignition coil.

5. The apparatus of claim 1 wherein second transforming means is an ignition coil.

6. The apparatus of claim 1 wherein said shorting means is selected from the group including a jumper wire, a low voltage relay, or a solid state switch.

7. An apparatus for monitoring the performance of an internal combustion engine, said internal combustion engine including a first low voltage electrical circuit, a power source attached to said first low voltage electrical circuit, first transforming means attached to said first low voltage electrical circuit and a high voltage electrical circuit, means for generating a high voltage electrical signal within said high voltage electrical circuit, a spark plug attached to said high voltage electrical circuit, said apparatus for observing comprising:

a. second transforming means attached to said high voltage electrical circuit consisting of a primary winding and a secondary winding;

b. observation means for observing said high voltage electrical signal connected to said primary winding of said second transforming means.

8. The apparatus of claim 7 wherein said means for producing a high voltage electrical impulse is selected from the group consisting of a distributor and electronic control unit.

9. The apparatus of claim 8, wherein said means for generating a high voltage electrical impulse is coupled with a switching device, said switching device being selected from

the group including a points, magnetic reluctance position sensor, a Hall Effect position sensor and an optical position sensor.

10. The apparatus of claim 7 wherein said first transforming means is an ignition coil.

11. The apparatus of claim 7 wherein second transforming means is an ignition coil.

12. The apparatus of claim 7 wherein said observation means is an oscilloscope.

13. The apparatus of claim 7 wherein said observation means is any diagnostic device capable of receiving an electronic signal.

14. A method for shorting a single spark plug within an internal combustion, said method comprising the steps of :

- a. applying a high voltage electrical impulse to a high voltage electrical circuit containing a spark plug;
- b. electrically connecting said high voltage current to a transformer;
- c. electrically shorting said low voltage side of said transformer;
- d. inducing low impedance in said high voltage electrical circuit with said transformer and said completed low voltage circuit;
- e. allowing said high voltage electrical impulse to pass to ground and prohibiting said spark plug from attaining a threshold firing voltage.

15. A method for observing the performance of a spark plug, said method comprising the steps of:

- a. applying a source voltage to a transformer;
- b. transforming said source voltage current to high voltage current;
- 5 c. electrically connecting said high voltage electrical signal to a spark plug;
- d. electrically connecting said high voltage current to a second transformer;
- e. creating a low voltage replica of said high voltage electrical signal without effectively lowering the voltage of said high voltage;
- f. firing said spark plug;
- 10 g. displaying the characteristics of said low voltage replica.